DOER report

A Publication Of The Massachusetts Division Of Energy Resources

September 1999

The Commonwealth of Massachusetts

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Market Monitor: Electric Industry Restructuring in Massachusetts

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Introduction

In 1998, the electric industry in Massachusetts was restructured, resulting in major changes to the pricing and provision of electricity to consumers. The year marked the beginning of the industry's transition from a highly regulated, vertically integrated monopoly structure to one that allows retail customers to choose among competitive power suppliers. Over the ten months from March through December 1998, the savings from the mandatory 10% rate cut were, on average, approximately $77 per residential customer, $756 per commercial customer, and $8,328 per industrial customer (see table 1).

Highlights

- ***Consumers saved almost $450 million in 1998.***
- ***The first year of restructuring did not change price disparities.***
- ***Utilities divested almost 90% of power generating plants.***
- ***The competitive retail market developed slowly.***
- ***Competitive suppliers focused on large commercial and industrial clients.***

Table 1: Savings From 10% Mandated Rate Reduction

	Residential	Commercial	Industrial	Other	All Customers
1998 Sales (billions of kWh)	13.991	20.012	7.603	0.289	41.895
Average Number of Customers (1998)	2,153,422	272,825	8,034	6,621	2,440,902
Average Revenue (cents) per kWh pre-3/1/98	11.9	10.3	8.8	20.3	10.7
Average Annual Expenditures pre-3/1/98 ($)	$773	$7,565	$83,279	$8,864	$1,837
Average Annual Savings per Customer ($)	$77	$756	$8,328	$886	$184
Estimated Total Savings in 1998 (millions of $)	$166	$206	$67	$6	$448

Sources: Energy Information Administration EIA Forms (1997), EIA Power Annual 1998, DOER

1998 IN REVIEW

In order to monitor the progress of electric industry restructuring, the Legislature requires the Division of Energy Resources (DOER) to report periodically on electricity prices and price disparities, competitive market developments, and electric system reliability (M.G.L. c. 25A §§ 7, 11D, 11E). DOER presents its major findings for calendar year 1998 below.

The First Year of Restructuring Did Not Change Price Disparities

A comparison of 1997 and 1998 retail prices among the eight distribution companies showed statistically insignificant changes in price disparity. The mandatory rate reductions lowered overall rates about the same amount for each company (see table 2).

Consumers Saved Almost $450 million in 1998

The mandatory rate reductions of 10% resulted in approximately $450 million in savings for distribution company customers. Moreover, four of the eight affected distribution companies were able to offer more than the required 10% discount during some months of the year, and one company was able to give customers up to a 19% rate cut. Over the ten months from March through December 1998, the savings from the mandatory 10% rate cut were, on average, approximately $77 per residential customer, $756 per commercial customer, and $8,327 per industrial customer.

Utilities Divested Almost 90% of Power Generating Plants

At the end of 1998, the distribution companies had either completed or were in the process of completing the divestiture of their non-nuclear generation assets. The sales resulted in nearly a 30% reduction in stranded costs statewide, although the accomplishment of those savings varied significantly from one distribution company to another.

Table 2: 1997 and 1998 Price Levels for Massachusetts Distribution Companies (cents/kWh)

Distribution Company	Residential		Commercial		Industrial*		Overall	
	1997	1998	1997	1998	1997	1998	1997	1998
Boston Edison	13.2	12.0	11.0	10.0	10.1	9.2	11.6	10.5
Cambridge Electric	12.9	11.5	8.8	7.6	8.1	7.0	9.3	8.1
Commonwealth Electric	13.8	12.5	11.0	10.0	9.1	8.5	12.2	11.1
Eastern Edison	11.0	9.8	9.9	8.6	9.8	8.5	10.4	9.2
Fitchburg Gas & Electric	12.4	11.9	12.4	11.8	8.8	8.9	10.7	10.5
Massachusetts Electric	10.8	9.7	9.6	8.7	8.3	7.7	9.8	8.9
Nantucket Electric	13.2	12.3	14.6	13.2	18.9	18.3	13.8	12.7
Western Massachusetts Electric	11.7	10.8	10.0	9.3	8.1	7.7	10.1	9.5
Price Disparity	1.4	1.5	3.8	3.7	.7	.6	2.2	2.3

Source: Federal Energy Regulatory Commission Form 1

*Note: Calculation excludes Nantucket Electric

Competitive Retail Market Developed Slowly

Several issues during 1998 led to slow growth in the competitive retail market. Impediments included low "standard offer" generation prices, the threat of a November 1998 referendum to repeal the Act, and delayed implementation of the bid-based competitive wholesale market. Nevertheless, in 1998, the DTE finalized the procedures and rules for registering competitive suppliers and brokers and licensed 22 competitive service providers. Registration is an important safeguard to protect consumers from fraudulent suppliers.

Competitive Suppliers Focused on Large Commercial and Industrial Customers

By the first quarter of 1999, competitive suppliers provided 1.3% of retail electricity sales; however, this represented only 0.13% of the total number of customers. This imbalance implies that competitive suppliers focused on securing large industrial and commercial customers. In many cases, suppliers captured these customers through aggregation groups. The majority of customers, particularly residential, remained on standard offer or default generation service.

Municipal and other Aggregation Groups Formed

The Act provided for formation of different types of aggregated groups to buy electricity. In particular, the Act gave municipal governments special rights to aggregate. In 1998, several cities and towns made progress toward becoming municipal aggregators. Other types of private and non-profit aggregation groups also formed plans to increase the buying power of participating consumers and reduce their transaction costs. Examples of such groups include the Health and Educational Facilities Authority, the Massachusetts Municipal Association, and chambers of commerce.

Distribution Company Acquisitions Were Proposed

Three mergers or acquisitions were announced in the first year of restructuring. BEC Energy is seeking to merge with Commonwealth Energy System. Under the deal, a new holding company, NStar, would be created. National Grid Group is seeking to acquire New England Electric System (NEES). In the first quarter of 1999, NEES announced it would acquire Eastern Utilities Associates. These proposed realignments reflect regulatory pressure to reduce distribution costs and the reduced risk profile of companies that have divested their generation assets. Requisite federal and state approvals are required.

The Electric Restructuring Act of 1997

Goals

The Act provides the framework for the evolution of the competitive electric industry. Its primary goals are to reduce electricity prices, provide choice of power suppliers to all retail customers, maintain the reliability of the electric system, improve distribution performance, and ensure consumer protection and education.

Provisions

Recognizing that restructuring the industry would be a complex process, the Legislature specified that the transition to competition should occur in "an orderly manner." Beginning on March 1, 1998, the most dramatic provision of the Act gave retail customers of affected distribution companies the option to choose their generation (power) supplier. They also began to receive at least a 10% discount off their 1997 rates on their bills. These customers will receive an additional 5% decrease starting September 1, 1999.

Other important provisions of the Act that serve to accomplish its goals include the following:

- Transition (Stranded) Cost Recovery—Utilities are allowed to recover prudently incurred investments as a charge on customers' bills after all reasonable steps, including divestiture, are taken to mitigate them .
- Public Benefit Programs—Low-income discounts were maintained and a 10% discount for farmers was added. Energy efficiency charges to support programs to reduce consumer electricity demand continue. Programs to support renewable energy sources will be developed.
- Consumer Protection and Education—Consumer protections were expanded. Educational materials, informational activities, and a toll-free telephone hotline were developed to assist customers in understanding and evaluating their rights and choices regarding supply options and related services.
- Environmental Benefits—After the year 2003, greater environmental protections and a renewables generation requirement will be implemented.

Reliability of the Electric System Remained a Top Priority

The Independent System Operator of New England (ISO-New England) assumed responsibility for operation of the New England bulk power market from the New England Power Pool (NEPOOL) in July 1997. Reliability of the bulk power system is the cornerstone of ISO-New England's operations. Procedures intended to maintain high standards for system reliability were put in place. DOER estimates that New England will have the necessary generation plants and resources to meet future summer electricity demand (see figure 1).

Over 30,000 Megawatts of New Power Plants were Proposed

Developers announced plans to build over 30,000 MW of new generation capacity across New England. While not all proposals will come to fruition, the increased competition from these new plants will force some of the existing, less efficient plants into retirement. Additionally, the almost exclusive use of natural gas and other low emission fuels in these proposed plants will reduce air pollution and provide customers with "clean" generation choices.

A Class Action Law Suit Was Filed

In March 1998, a group of retail customers of Massachusetts electric distribution companies filed a class action suit on behalf of all retail customers. The suit sought a declaratory judgment from the Supreme Judicial Court (SJC) against distribution companies, the Department of Telecommunications and Energy (DTE), the DOER, and the Massachusetts Technology Park Corporation (MTPC). The complaint alleged that the Restructuring Act's requirement that distribution companies include in their rates mandatory charges for energy efficiency and renewable energy fund activities was unconstitutional. A decision in the case is expected in 2000.

Fig. 1: Summer Peak Demand and Summer Capability to Meet Demand

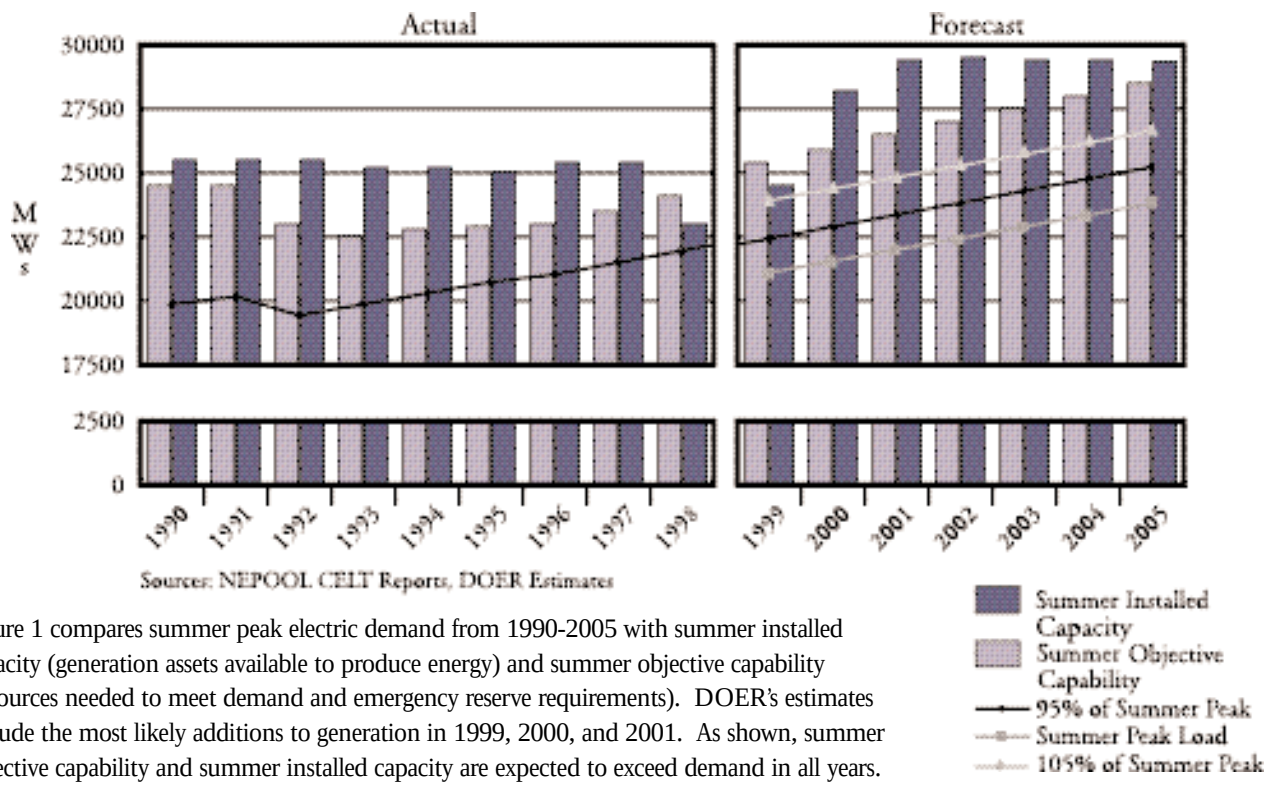


Figure 1 compares summer peak electric demand from 1990-2005 with summer installed capacity (generation assets available to produce energy) and summer objective capability (resources needed to meet demand and emergency reserve requirements). DOER's estimates include the most likely additions to generation in 1999, 2000, and 2001. As shown, summer objective capability and summer installed capacity are expected to exceed demand in all years.

Electricity Prices: Massachusetts, New England and the Nation

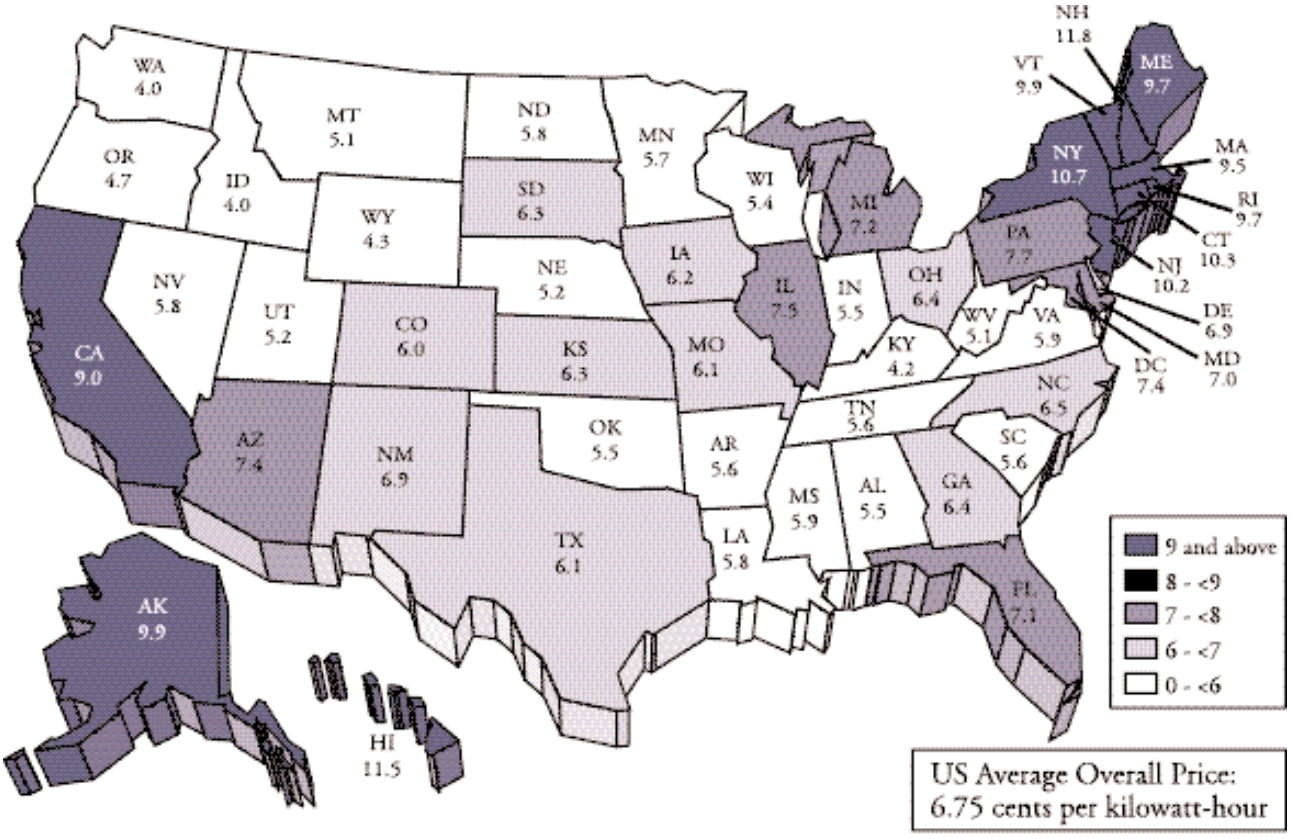
In 1997, Massachusetts' average electricity price of 10.5 cents per kilowatt-hour placed the Commonwealth in a three-way tie with New Jersey and Connecticut for the fifth highest rate in the United States. By the end of 1998, Massachusetts, largely due to the mandated rate cut, had dropped four places to the ninth highest rate in the nation, with average electric prices at 9.5 cents per kilowatt-hour.

Figure 2 presents 1998 price data for each state. These prices represent the weighted average of prices paid by all customers in each state. The average price for all states was 6.75 cents per kilowatt-hour. The range of prices runs from a low of 4.0 cents per kilowatt-hour in Idaho to a high of 11.8 cents in New Hampshire, a variance factor of almost three. The dramatic price disparity between states is the result of numerous regional differences, including fuel prices, climate, construction costs, labor costs, customer mix, tax rates, and the proximity of customers to generating facilities.

Figure 2 also clearly displays that the New England states have some of the highest electricity prices in the country. Prices in Massachusetts and New England have historically have been 45% to 50% higher than the national average. The impact of the Act's mandated rate reduction on Massachusetts' prices is significant. In New England, only Rhode Island experienced an equivalent drop in electricity prices, due primarily to a rate cut required by its restructuring program.

Even with the 1998 rate reductions, Massachusetts' electricity prices still remain among the nation's highest. However, as transition costs decrease and competitive market forces strengthen over time, prices in the Commonwealth should decline even further. A number of factors specific to New England will make it difficult for Massachusetts' electricity prices to fall below the national average in the foreseeable future.

Fig. 2: 1998 Average Overall Electricity Prices by State (cents/kWh)



Source: Energy Information Administration "Average Revenue per kilowatthour for U.S. Electric Utilities by Sector, Census Division, and State, 1998" Electric Power Annual, 1998.

Figure 3 presents DOER's estimated trajectories of the various unbundled bill components for an average residential customer, weighted for all distribution companies, through the seven-year transition period. Several items are worthy of note:

1.) By 1999, all distribution companies will have reduced their transition charge and increased their standard offer charge.

2.) The standard offer generation rate steadily climbs over the transition period reaching a peak of 5.1 cents per kilowatt-hour in 2004. This increase should allow retail suppliers to compete against standard offer service.

3.) As the standard offer generation rate climbs to its highest level, transition charges steadily decrease.

4.) Assuming an inflation rate of 2.5%, 2004 rates should be less, in constant dollars, than the pre-restructuring rates.

Fig. 3: Regulated Price Trajectory – 600 kWh/month Residential Customer
Weighted Average of Distribution Companies

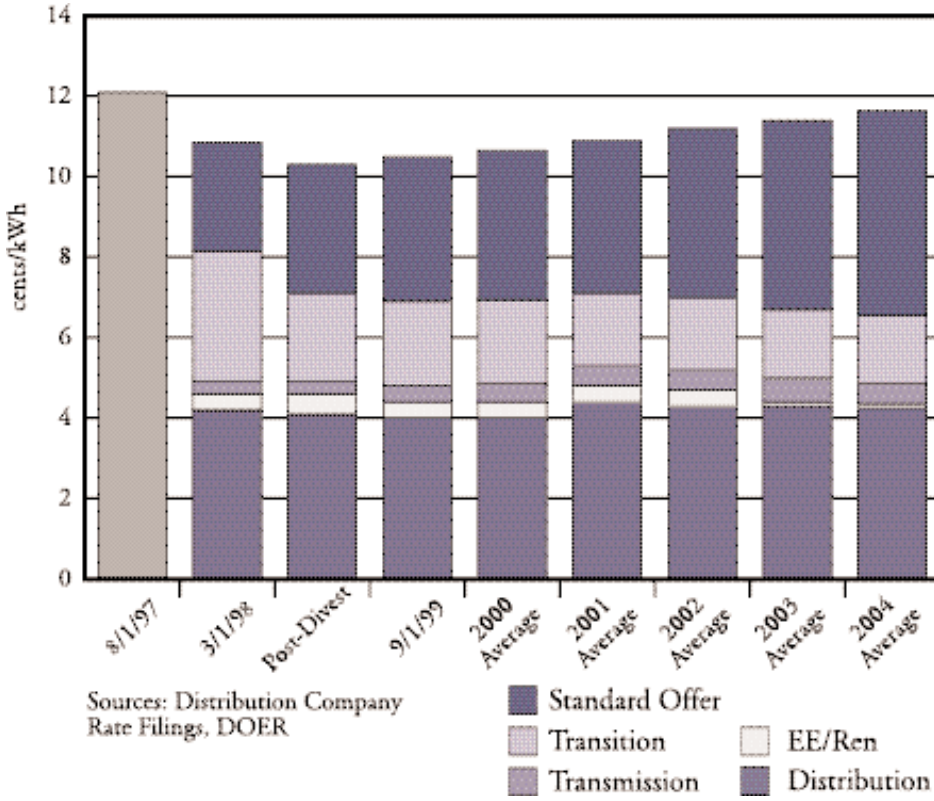
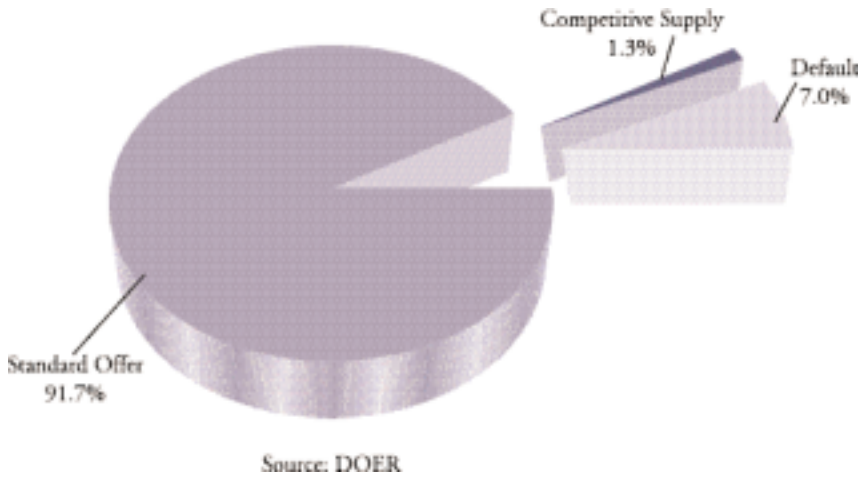


Fig. 4: Composition of Distribution Company Sales (kWh): First Quarter 1999



Electricity customers in Massachusetts have three options for the type of generation service they receive: Standard Offer Service, Default Service, and Competitive Supply. Figure 4 shows the state-wide composition of the distribution companies' customer base in terms of these three supply options as of the end of the first quarter of 1999.

Likely Developments

The future seems likely to hold the following developments.

• Accelerated Retail Competition
More customers should move to retail competitive suppliers over time. Decreases in transition charges have allowed for increases in standard offer generation prices, which should make it possible for competitive suppliers to enter the retail market. Also, municipalities, trade organizations, and other large electric customers are looking at bidding out their electricity load to competitive suppliers.

• Lower Rates
Overall retail rates for standard offer customers will be further reduced by 5% on September 1, 1999, bringing the total rate reduction to 15%. Moreover, with respect to generation supply, power plant owners will likely reduce costs and improve operating efficiencies to meet competitive prices of new plants thus lowering the market price of generation.

• Performance Based Rates for Distribution
In order to reduce distribution company service costs while maintaining appropriate levels of reliability, the Act authorized the DTE to promulgate rules and regulations establishing performance based rates (PBR) for each distribution company. Under PBR, distribution company efficiencies are rewarded and poor performance is penalized.

• Increased Wholesale Price Volatility
Hourly wholesale spot market electricity prices are likely to become more volatile as a result of the change from cost based to bid based pricing. However, supply contracts and financial hedging instruments will allow retailers to offer fixed prices to consumers.

• Industry Convergence
Distribution companies are expected to merge with gas companies, telecommunication companies, and cable operators, among others. This convergence of "network industries" should lower costs through increased efficiencies in "shared services," such as administration, billing, and customer services. Convergence can provide greater customer convenience through "one-stop-shopping."

• Improved Economic and Job Creation Activities
Restructuring should increase the level of economic activity and job creation in the Commonwealth. Competitive pressures in generation and consolidations from mergers and acquisitions may result in job reductions in electric industry employment. However, new electricity-related companies entering the market will offset some of these reductions by increasing services and employment.

• New Product Developments
Early indications suggest two main groups of products and services are emerging. The first contains energy-related products and a variety of energy efficiency and engineering services. The second contains technology-related products and services such as cable television, Internet, and local telephone service.

• Improved Air Quality
The vast majority of new power plants proposed for the region are highly efficient natural gas-fired plants. Although not all the proposed projects will be completed, enough new capacity should be constructed to force the retirement or reduced use of some older, less efficient plants. Furthermore, additional nitrogen oxide limits, pursuant to Federal Clean Air Act Amendments are scheduled to begin in the summer of 1999.

• Additional Renewable Energy Sources
Provisions contained in the Act mandate renewable energy sources. "Green" marketing offers by competitive suppliers and increased awareness from customer information disclosure will help spur the construction of more renewable capacity.

• Further Choice in Reliability Levels
As competitive suppliers tailor products more closely to the needs of customers, some, particularly industrial customers, will be able to choose to allow interruptions of their power supply to lower their electricity costs.

• Potential Evolution of the Management of the New England Transmission System
The Federal Energy Regulatory Commission has debated various alternate approaches to operating transmission systems. One approach is a non-profit ISO managing transmission assets with ownership remaining with the incumbent utilities-New England's current system. Another is to create a for-profit transmission company that acquires or retains ownership of all transmission, a "transco." Some parties who may want to revisit the overall structure of the ISO claim that the ISO New England has little authority or incentive to require the construction of new transmission.

Please visit our web site at
http://www.state.ma.us/doer/
Suggestions and comments can be e-mailed to
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The DOER Report is a publication of the Commonwealth of Massachusetts Office of Consumer Affairs and Business Regulation, Division of Energy Resources. Suggestions, questions and input are invited. Send to Division of Energy Resources Market Development Team, The Massachusetts Division of Energy Resources, 100 Cambridge Street, Room 1500, Boston, MA, 02202. DOER staff members can be contacted at (617) 727-4732.

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